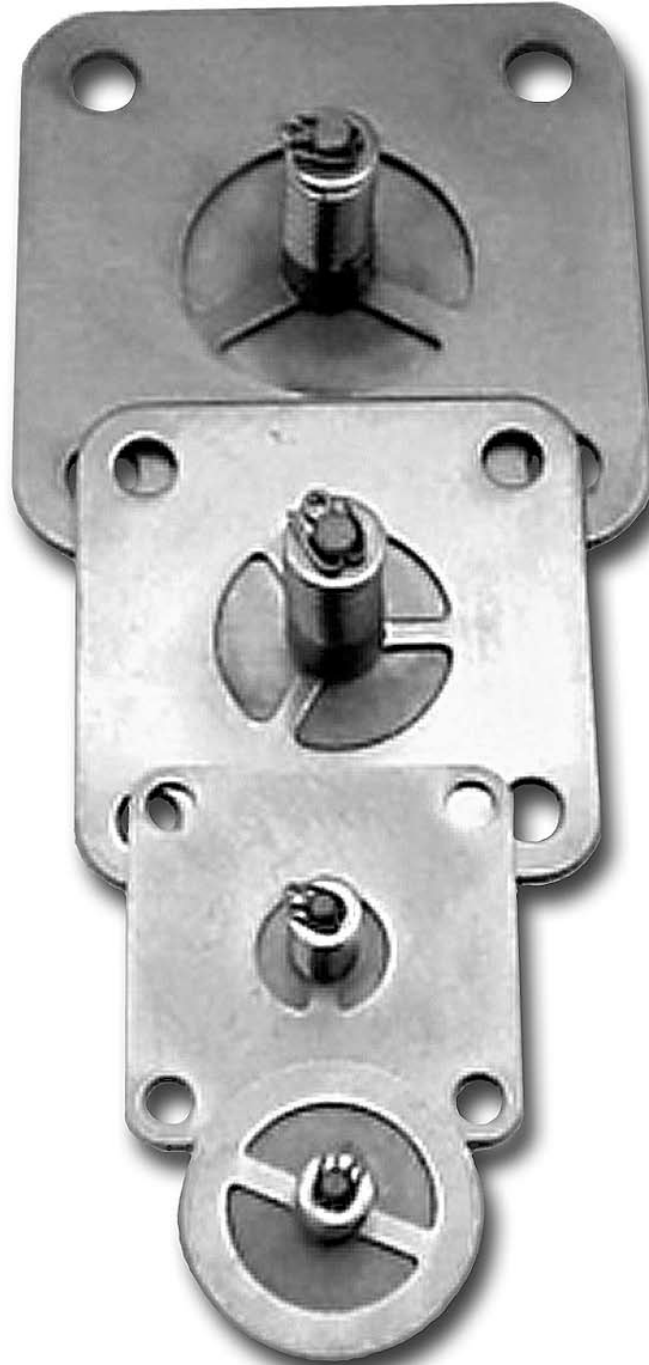




# Spring Loaded Check Valves

## Installation and Parts Manual



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## Publication Updates and Translations

The most current English versions of all Liquid Controls publications are available on our website, [www.lcmeter.com](http://www.lcmeter.com). It is the responsibility of the Local Distributor to provide the most current version of LC Manuals, Instructions, and Specification Sheets in the required language of the country, or the language of the end user to which the products are shipping. If there are questions about the language of any LC Manuals, Instructions, or Specification Sheets, please contact your Local Distributor.

### ⚠ **WARNING**

- Before using this product, read and understand the instructions.
- Save these instructions for future reference.
- All work must be performed by qualified personnel trained in the proper application, installation, and maintenance of equipment and/or systems in accordance with all applicable codes and ordinances.
- Failure to follow the instructions set forth in this publication could result in property damage, personal injury, or death from fire and/or explosion, or other hazards that may be associated with this type of equipment.

## General Information

Liquid Controls **Check Valves** are designed to maintain back pressure to increase air/vapor eliminator efficiency and to prevent reverse flow of product through the meter. This assures that the meter and all components downstream remain full of the liquid being measured.

Check Valves are normally closed, spring loaded valves. When fluid enters the meter from the inlet side, and the pressure is greater than the back pressure combined with the force of the spring, the spring will compress, opening the valve thus allowing fluid to pass through (as shown in the figure below).

When back pressure plus spring strength is greater than the fluid pressure entering the meter, the valve will remain closed.

There are six Check Valve models available and the valve model is specified based on the Liquid Controls meter model and accessories being used.

**Model 41370:** Used with M-15, 3" flowmeters.

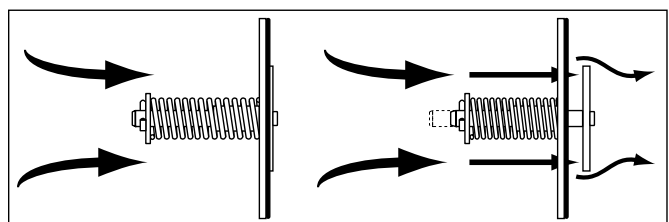
**Model 41380:** Used with M-30, 4" flowmeters.

**Model 502020:** Used with M-7 & M-10, 2" flowmeters.

**Model 46743:** Used with M-5, 1½" flowmeters.

**Model 49896:** Used with M-15 & M-25, 3" flowmeters equipped with a 3", high capacity strainer.

**Model 501267:** Used with MA-4 dispenser flowmeters.



## New Installations

When ordered with a new meter, the Spring Loaded Check Valve is mounted to the inlet side of the meter, between the Strainer/Air Eliminator and meter housing, as shown in the figure to the right.

## Retrofit Installations

Depending on the existing configuration, adding a Spring Loaded Check Valve may require modification of the inlet piping.

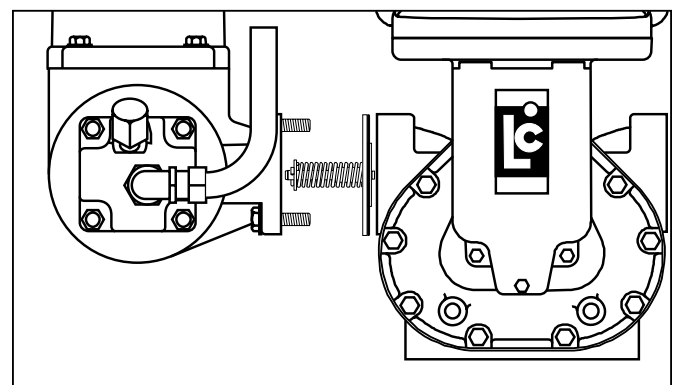
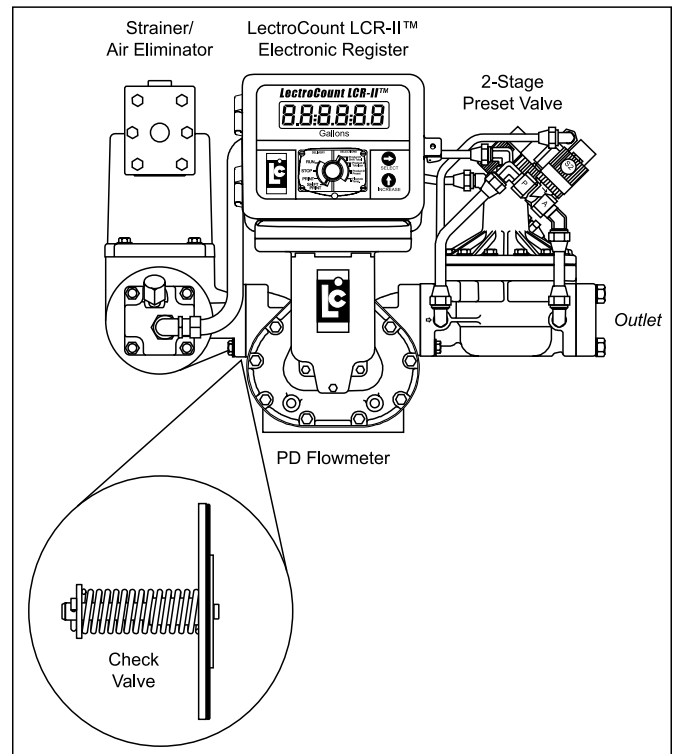
Close any valves on the inlet and outlet side of the meter and relieve all pressure from the system.

After the internal pressure has been relieved from the system, the meter and connecting piping should be drained of all fluid. This is accomplished by opening the drain plugs on the meter. The inlet line can then be disconnected from the inlet side of the strainer/air eliminator assembly. Once this is complete, the strainer/air eliminator assembly can be removed from the meter. Keep all screws and washers as they will be used when reassembling the system.

The Spring Loaded Check Valves are either square or round. Square check valves are provided with a gasket. Round check valves do not use a gasket and are only installed on systems which have high capacity strainers.

The gasket is positioned on the output side of the check valve so that it rests between the check valve and the meter housing. The strainer/air eliminator connection is equipped with an O-Ring seal and will rest between the strainer/air eliminator housing and the inlet side of the check valve.

Position the check valve as shown to the right and reinstall the strainer/air eliminator using the bolts and washers that were removed earlier.



## **⚠ WARNING**

Before disassembly of any meter or accessory component, **ALL INTERNAL PRESSURES MUST BE RELIEVED**. Pressure must be 0 (zero) psig. Close all liquid and vapor lines between the meter and liquid or gas pressure source (such as the supply tank, discharge lines and supply lines).

Relieve pressure by bleeding the vapor side of the differential valve to atmosphere pressure within the assembly. For **Safety Rules regarding LPG**, refer to **NFPA Pamphlet 58** and local authorities.

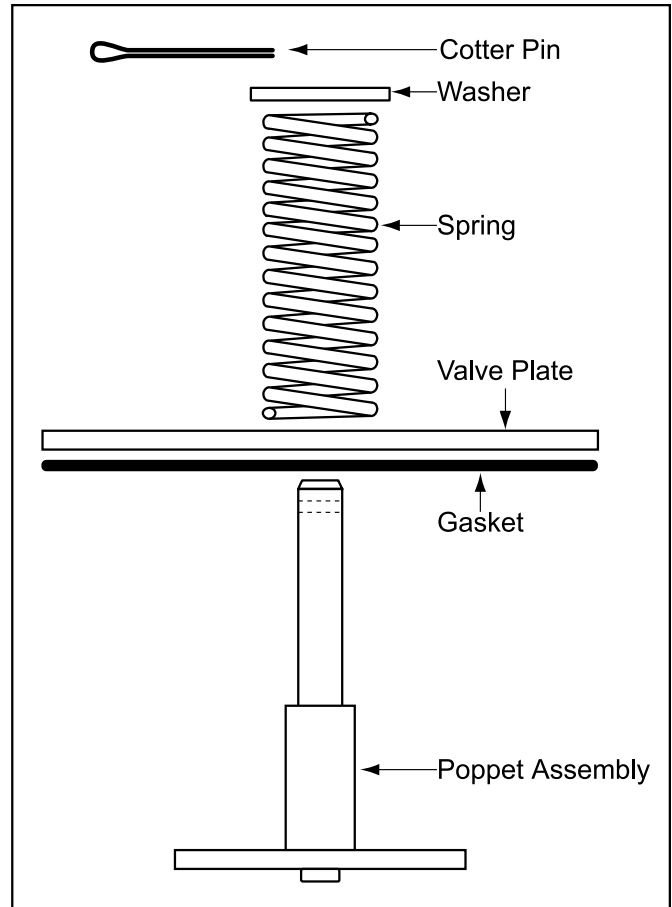
# Check Valve Assembly

The assembly of each of these check valves is similar.

- 1 The poppet inserts through the center of the valve plate.
- 2 The spring fits over the poppet end.
- 3 The washer is used to hold the spring in place. Push the washer down to compress the spring until the hole for the cotter pin is accessible.
- 4 Insert the cotter pin and bend the ends around the end of the poppet assembly to secure.

The gasket typically has a center hole that is slightly larger than the outer diameter of the poppet assembly and can be installed when the check valve is installed between the strainer/air eliminator assembly and the meter housing.

**NOTE:** Model 501267 is unique in that the gasket is attached to the valve plate. It should not be removed. The poppet assembly rests against the gasket, unlike the other models where the poppet rests against the valve plate.

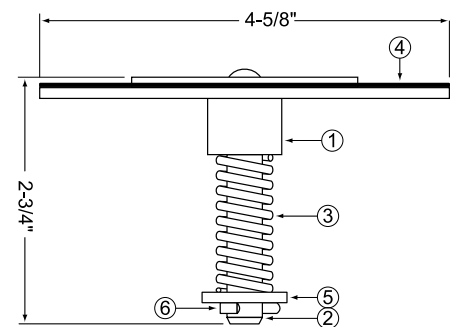
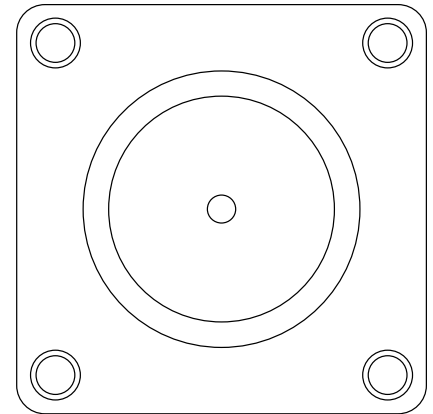


# Illustrated Parts Breakdown

## 41370 - Check Valve

Used with M-15, 3" flowmeters.

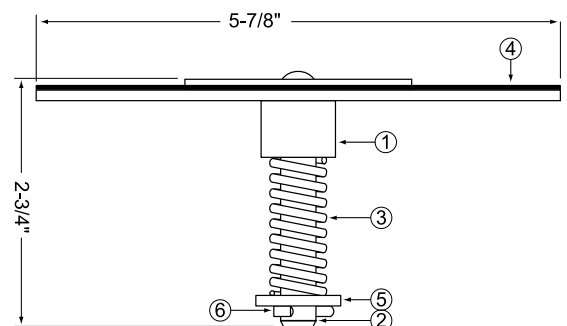
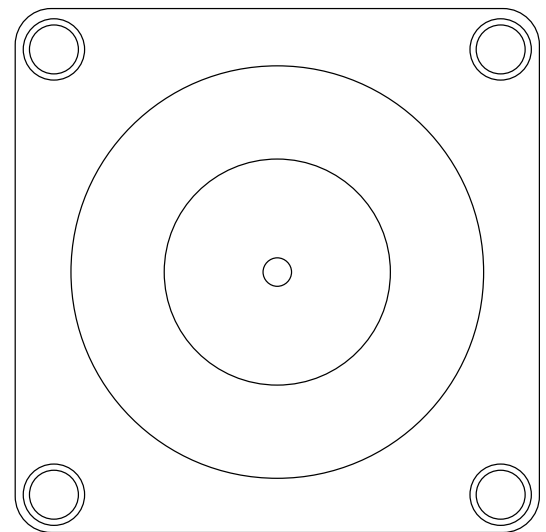
Item No.	Description	Part No.
1	Valve Plate Assembly	N/S*
2	Poppet Assembly	N/S
3	Compression Spring	N/S
4	Flange Gasket	40871
5	Flat Washer	40241
6	Cotter Pin	00294



## 41380 - Check Valve

Used with M-30, 4" flowmeters.

Item No.	Description	Part No.
1	Valve Plate Assembly	N/S
2	Poppet Assembly	N/S
3	Compression Spring	N/S
4	Flange Gasket	40704
5	Flat Washer	40241
6	Cotter Pin	00294



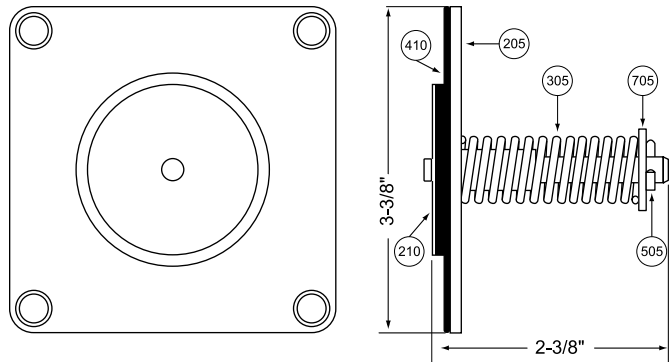
\*N/S = Not for Sale

# Illustrated Parts Breakdown

## 502020 Check Valve

Used with M-7 & M-10, 2" flowmeters.

Item No.	Description	Part No.
1	Valve Plate Assembly	502014
2	Poppet Assembly	502019
3	Compression Spring	07426
4	Flat Washer	04379
5	Cotter Pin	06086
6	Flange Gasket	40430

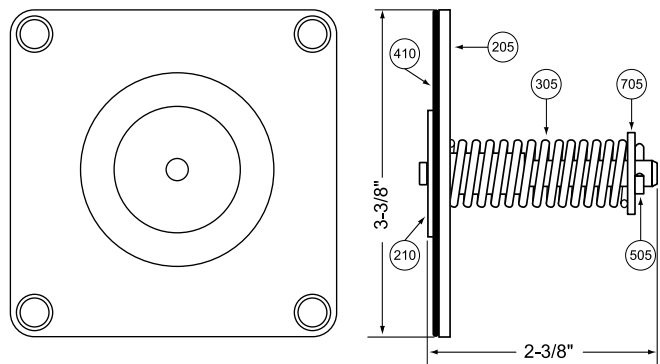


502020 valve automatically included with A2360 High-Capacity Strainer

## 46743 Check Valve

Used with M-5, 1 1/2" flowmeters.

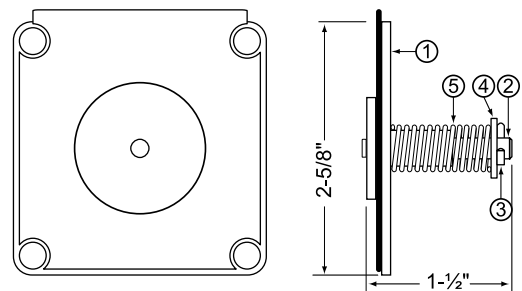
Item No.	Description	Part No.
205	Valve Plate Assembly	46744
210	Poppet Assembly	N/S
305	Compression Spring	07426
410	Flange Gasket	40430
705	Flat Washer	04379
505	Cotter Pin	06086



## 501267 Check Valve

Used with MA-4 dispenser flowmeters.

Item No.	Description	Part No.
1	Valve Plate Assembly	501263
2	Poppet Assembly	501266
3	Cotter Pin	06086
4	Flat Washer	04379
5	Compression Spring	09072

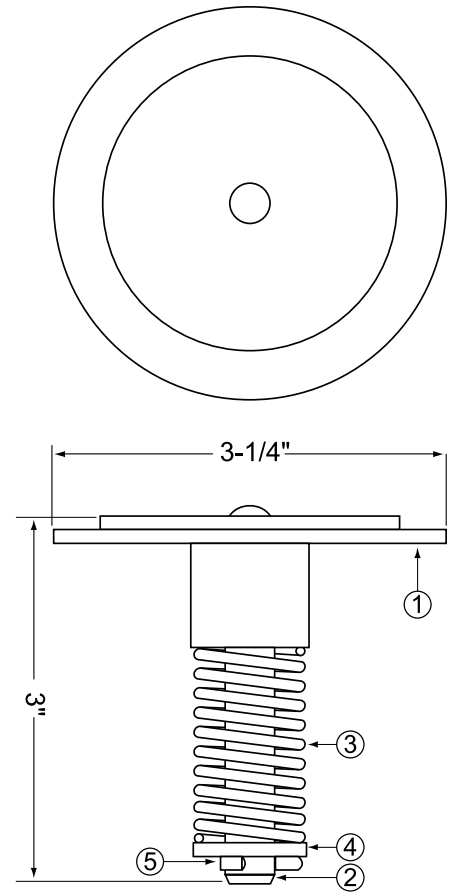


# Illustrated Parts Breakdown

## 49896 Check Valve

Used with M-15 & M-25, 3" flowmeters equipped with a 3", high capacity strainer.

Item No.	Description	Part No.
1	Valve Plate Assembly	N/S
2	Poppet Assembly	N/S
3	Compression Spring	N/S
4	Flat Washer	40241
5	Cotter Pin	00294



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